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ABSTRACT

This study examined the impact of state budget cuts on public colleges and universities in six states, focusing on the effects of such cuts on institutional priorities and plans, tuition and fees, and educational quality. Five state higher education finance officers, 12 state college or university system finance officers, and 98 college or university finance officers from California, Florida, Massachusetts, New York, Texas, and Wisconsin were surveyed in 1997. It was found that state college and university systems relied mostly on short-term measures such as enrollment reductions, tuition and fee increases, vacancies and salary freezes, and early retirements, which generally emphasized raising revenues and restricting expenses, to alleviate funding cuts, and neglected the reshaping of missions and priorities. Institutional responses indicated that individual colleges and universities took a much more proactive approach to funding cuts, including the reshaping of missions and priorities. However, individual campuses did not depart significantly from state systems' preferences for short-term cost-saving measures such as salary and hiring freezes. An appendix provides a breakdown of the survey population. (Contains 35 references.) (MDM)

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Andreea M. Serban & Joseph C. Burke

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The Impact of State Budget Reductions in the 1990s:
A View of Public Higher Education in Six States

Abstract

In the early 1990s, public higher education nationally received the worst state budgets in four decades, yet the real impact on students and society remains in doubt. We know nationally, and state by state, the reduced level of state appropriations for public colleges and universities. What is missing is an account of how institutions accommodated these cuts and how their actions affected the quality and quantity of their programs, services, and operations. This presentation provides such an account by comparing and analyzing how public higher education systems and four-year institutions in California, Florida, Massachusetts, New York, Texas, and Wisconsin have crossed internal and external organizational boundaries in order to respond to state budget reductions during the 1990s. The information presented is drawn from an extensive study of the impact of state budget reductions in the six states conducted by the Public Higher Education Program at the Rockefeller Institute and sponsored by the Henry Luce Foundation.

Introduction

According to Gold (1995, p. 3) "the early 1990s were stressful years for state governments. Several governors described the fiscal crisis as the most severe since the Great Depression." As a result, "many states raised taxes and announced cuts in spending and employment, with some particularly dramatic reductions in higher education and welfare programs." Hines labels the early 1990s as "bleak years" for public colleges and universities. In 1992-93, for the first time in history, the national average in state funding for higher education fell below that for the previous year.

The funding public higher education received in the first half of the 1990s is documented and the decline in state support is not in doubt. The Grapevine reports (Hines, 1992, 1993, 1994, 1995, 1996, 1997) provide detailed evidence of state appropriations for higher education. Gold (1995) concluded that public higher education was a "big loser" in the budget battles of the early nineties to corrections, health care, welfare, and K-12 education.

Since 1990, all major state programs, other than Medicaid and corrections, have grown smaller as a percent of state budgets. Higher education decreased from 12.3 percent of state spending in 1987 to 10.3 percent in 1995, its lowest point since 1987. In 1990, Medicaid replaced higher education as the second largest state spending category, second only to elementary and secondary education spending. Medicaid and corrections programs are pressing down on state budgets at the same time that the public in most states is demanding downsized government and reduced taxes (National Association of State Budget Officers, 1996).

What is missing is an account of how public colleges and universities accommodated these cuts and how their actions affected the quality and quantity of their programs and services. Did campus leaders treat the reductions of the early 1990s as signaling a historic shift in state support of public higher education or as a momentary dissatisfaction with its costs and performance? Did the responses of state colleges and universities suggest a reordering of priorities and restructuring of operations to reduce costs and raise performance or merely a forced reaction to a temporary crisis? These questions are critical for government and campus policy makers because the consequences are what counts for students, states, and society.

Purpose of the Study

The impact of budget cuts depends on two factors: the size of the reduction and the details of its implementation. The purpose of this study is to examine public higher education systems and their campuses in six major states that actually implemented the reductions in state support. The states are California, Florida, Massachusetts, New York, Texas, and Wisconsin. All six have multi-campus systems, represent a range of the nation's regions and reflect the economic, cultural, and political differences that exist among the states.

This study investigates what was cut and analyzes what these decisions suggest about plans and priorities at state colleges and universities. The ultimate goal is to determine whether public colleges or universities reacted with short-term adjustments or responded with long-term restructuring. This study details the specific decisions made by colleges and universities in response to state budget reductions. It answers a series of questions that affect the policy issues of access and quality that have dominated debates on public higher education for nearly three decades:

- To what extent did tuition and fees fill the gap left by the withdrawal of state funds and did these increases depress enrollments and diminish access?
- What were the cuts actually made by state colleges and universities and did these reductions in programs and activities erode quality?

Answers to these questions can inform state policy makers as they set the budgets for public higher education and assist campus administrators in responding to restrained budgets in the future. The decline in appropriations and the rise in tuition cover only part of the budget impact story. Of equal importance is how the cuts in funding were actually allocated from systems to their campuses and by campus leaders to institutional units. Only such information permits an analysis of the effect on missions and goals, on organizations and operations, on faculty and staff, and on students and states.

Research Methodology

This is an exploratory study of state, system, and institutional responses to the fiscal constraints of the first half of the 1990s. To discover the reactions to the problems of the period, separate surveys were sent to the finance officers of state coordinating or planning agencies, university systems, and comprehensive campuses and research universities. The study did not include two-year colleges due to the variations in their financing methods.

For analysis and presentation purposes, public institutions are grouped in two categories:

- comprehensive campuses, which include institutions in the six states classified by the Carnegie Foundation as Master's I and II, Baccalaureate I and II, and Specialized with the highest offerings baccalaureate or master, and

- graduate and research campuses, which include institutions in the six states classified by the Carnegie Foundation as Research I and II, Doctoral I and II, and Schools of Law or Medicine.

The surveys were first mailed on October 1997 and a follow-up was mailed in November 1997. At the system and campus levels, the survey population included all finance officers of public comprehensive and graduate and research campuses and their systems. At the state level, the survey population included the five State Higher Education Finance Officers (SHEFOs) (Wisconsin has no statewide coordinating or planning body).

All five SHEFOs and all finance officers of the twelve systems surveyed responded. The institutional response rate reached 68 percent, running from a high of 90 percent in Florida to a low of 54 percent in Massachusetts and Wisconsin. The responding institutions included a representative sample of research universities and comprehensive campuses, as well as a good mix of institutional types and a reasonable number of units in each of the twelve systems (see Appendix 1). The surveys were sent to finance officers to ensure a single, knowledgeable contact. However, the answers from systems and institutions required input from officers in academic affairs and institutional research. Telephone conversations with some of the respondents confirmed that their replies represented collective responses, based on input from several offices.

The three survey groups received different questionnaires. However, some of the questions were similar for all groups in order to permit a comparative analysis of their responses. The questionnaires addressed the following general areas:

- the extent of the fiscal problem;
- the planning process and major participants;
- the approaches to reduction allocation;
- the changes in budgeting and governance;
- the impact on personnel, curriculum, teaching, learning, research and service;
- the degree of system and institutional restructuring; and
- the alteration in missions, programs and enrollment strategies.

The common questions for the three surveys inquired about the perceived extent of the fiscal problems for public higher education, systems, and institutions; the role of tuition and fee increases in filling the budget gaps; the primary method of distributing state budget reductions to systems and from systems to institutions; the importance of various factors in state budget allocations to campuses, the change of governance; the measures that best characterize the responses of systems and institutions to the fiscal stringency; and the impact of state funding during the period on quality of and access to higher education.

The questionnaires also contained specific questions for each of the three groups. The SHEFO survey inquired about the role of the state, system, and campus leaders in shaping the response to the budget constraints, and measures proposed and implemented by state coordinating bodies. The survey of system finance officers added questions about the role of the systems in responding to the fiscal problems; the planning processes at the system level and participants; the restructuring of system organization and operation; the proposed and achieved consolidation and/or closure of campuses and academic programs; and the change of missions and enrollment strategies. Institutional finance officers were asked about the distribution of budget reductions within campuses and its effects on campus organization and operations; the changes in personnel strategies; the retrenchment of faculty; the alterations in enrollment strategies; the methods implemented to increase productivity and efficiency; the changes in number of classes or sections; the consolidation and/or elimination of units, offices, and activities; the privatization of activities or services; the implementation of outcomes assessment, best practices in undergraduate education, and/or Total Quality Management/Continuous Quality Improvement (TQM/CQI); the changes in undergraduate curriculum; and the role of system and campus central administrations in shaping campus responses to the budget stringency.

A descriptive and exploratory analysis of the survey data was conducted across the six states, among the three respondent groups within and across the states, and among types of

institutions (comprehensive campuses and graduate and research campuses) within and across the states. The statistical analysis performed was limited to the calculation of means, standard deviations, frequencies, and percentages.

Answers to the questionnaires provided the information necessary to evaluate the impact of state funding reductions on public policy issues, such as access and quality, undergraduate education, graduate studies and research, and student and state needs. The specific steps taken to achieve state fiscal cuts also offered clues about institutional priorities and budget strategies.

Context of Public Higher Education in the Six States

State Funding

The budget reductions varied in the six states of the study (see Tables 1 and 2). New York suffered the most severe cuts, followed by Massachusetts and California. In terms of current dollars, only New York suffered a decline between 1990-97. However, in constant dollars, all states but Florida, market a decline. The pattern of state appropriations also varied. In Massachusetts, the reductions were severe earlier in the period followed mostly by increases throughout the rest of the period, except in 1994-95. New York experienced a negative pattern interrupted during 1993-95, which brought small increases. Wisconsin had decreases mostly in the last two years. In Texas, appropriations alternated decreases in one year with increases in the next year. Florida and California were somewhat similar in the appropriation pattern. In current dollars, California marked a decrease only during 1993-95 and Florida during 1990-92. However, in constant dollars, the decreases were much more severe in California.

The prospects for future state funding in the six states, however, seem somewhat brighter due to strong economies. In California, fiscal year 1997-98 marked the third year of the Governor's four-year "Compact" with the public universities. The Compact promises that the University of California and the California State University systems will each receive an average annual General Fund increase of 4 percent (State Higher Education Finance Officers, 1997). In Florida, the 1997 legislature appropriated a 7.8 percent increase to the State University System in General Revenue and Lottery funds. In Massachusetts, the trend in state support for public higher education has been mainly upward since 1992, following a period of dramatic decline between 1988-1992. Total fiscal year 1997 institutional revenues per student adjusted for inflation have returned to levels of support provided in fiscal year 1988. However, the percentage of total revenues from student charges is now significantly greater than in 1988. The recent upsurge in tax revenues produced by the New York's robust economy had made it unnecessary to increase tuition or to trim spending on the state's Tuition Assistance Program. In Texas, total appropriations for institutions of higher education for the 1998-99 biennium are up 11.5 percent over the previous biennium. Relative to the previous biennium, university appropriations increased 8.3 percent. For Wisconsin, the 1995-97 biennium brought a $33 million ongoing reduction in state support for the University of Wisconsin system. This is the first absolute reduction in state funding in the system's operating budgeting since its creation in 1972. The reduction was offset partially by $10.7 million in tuition and application-fee increases.

Table 1. State Higher Education Appropriations
Percent Change Compared to the Previous Year and 8-Year Percent Change
(based on current dollars)

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	8-year change (96-97 compared to 89-90)
CA	0.2	6.0	-13.3	-11.7	8.4	7.3	12.1	6.0
FL	-0.6	-6.8	1.2	8.5	7.3	7.6	10.2	29.5
MA	-14.6	-16.3	11.4	27.2	-9.9	3.6	9.5	3.5
NY	-3.0	-6.3	-4.2	6.8	5.4	-9.3	-1.0	-11.9
TX	-1.7	9.4	-0.7	13.8	-3.2	4.8	-1.8	21.0
WI	6.1	2.3	4.6	3.7	4.6	-0.8	-0.5	21.6

Source: based on figures from Hines

Table 2. State Higher Education Appropriations
Percent Change Compared to the Previous Year and 8-Year Percent Change
(based on constant 97 dollars)

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	8-yr change (96-97 compared to 89-90)
CA	-4.7	2.3	-15.7	-14.6	5.2	4.2	8.9	-16.3
FL	-5.5	-10.1	-1.6	4.9	4.1	4.5	7.0	2.2
MA	-18.8	-19.2	8.3	23.0	-12.6	0.6	6.3	-18.3
NY	-7.8	-9.6	-6.9	3.3	2.3	-11.9	-3.8	-30.5
TX	-6.6	5.6	-3.5	10.0	-6.1	1.7	-4.6	-4.5
WI	0.8	-1.3	1.7	0.2	1.5	-3.6	-3.3	-4.1

Source: based on figures from Hines adjusted for inflation based on the Higher Education Price Index.

Tuition and Fees

As many states across the country reduced tax support for public higher education, tuition became a favorite source of income for filling part of the gap. Washington State Higher Education Coordinating Board (1997) documented a dramatic increase in tuition at public institutions during this period. Halstead (1995) reported that tuition at public institutions rose nearly 44 percent from 1990-91 through 1994-95. State after state mandated or allowed tuition rates to rise to unprecedented heights to cushion or cover the size of the funding cuts.

All six states increased tuition and fees throughout the period (see Tables 3 and 4). Massachusetts, California, and New York had the highest increases. Florida and Wisconsin did not face the huge increases of the other states, mainly due to limits placed on the Florida State University System and University of Wisconsin by the legislatures in their states (Sanches-Penley, Martinez, and Nodine, 1997, Lenth, 1993). Tuition revenues in Texas fell in between these two groups.

In 1987-88, average tuition and fees at public research universities in all six states was below the national average and the average at state colleges and regional universities trailed behind the national average in four of the states. By 1996-97, the picture was somewhat different. For the first category of institutions, only Florida, Texas, and Wisconsin remained below the national average. For the second category, only New York and Massachusetts continued to be above the national average. Looking at tuition as a percent of state appropriations (see Table 5), the family burden in Florida and California appears less heavy than in the other four states. It should be noted that this statistic represents a general measure that includes the community colleges. In California, community colleges were charging only $390 in tuition and fees in 1995-96.

Table 3. Resident Undergraduate Tuition and Required Fees (State Averages)
Public Research Universities

	1987-88	1992-93	1993-94	1994-95	1995-96	1996-97	Percent Change	
							1992-93 compared to 1987-88	1996-97 compared to 1987-88
CA	1,473	3,249	3,970	4,347	4,355	4,355	120.6	195.7
FL	1,108	1,706	1,765	1,783	1,795	1,888	54.0	70.4
MA	2,006	5,062	5,467	5,467	5,514	5,413[a]	152.3	169.8
NY	1,474	3,073	3,103	3,144	4,060	4,190	108.5	184.3
TX	1,368	1,420	1,486	1,710	2,384	3,178	3.8	132.3
WI	1,737	2,344	2,538	2,735	2,879	3,030	34.9	74.4
National Average	1,710	2,632	2,837	3,019	3,187	3,358	53.9	96.4

Source: Washington State Higher Education Coordinating Board data set.
[a] Fees reduced

Table 4. Resident Undergraduate Tuition and Required Fees (State Averages)
State Colleges and Regional Universities

	1987-88	1992-93	1993-94	1994-95	1995-96	1996-97	Percent Change	
							1992-93 compared to 1987-88	1996-97 compared to 1987-88
CA	769	1,472	1,613	1,864	1,900	1,923	91.4	150.1
FL	1108	1,706	1,765	1,783	1,795	1,888	54.0	70.4
MA	1299	3,158	3,332	3,384	3,510	3,453[a]	143.1	165.8
NY	1478	2,901	2,927	2,978	3,739	3,831	96.3	159.2
TX	886	1,384	1,557	1,659	1,746	2,012	56.2	127.1
WI	1564	1,962	2,142	2,219	2,353	2,471	25.4	58.0
National Average	1385	2,123	2,277	2,401	2,534	2,645	53.3	91.0

Source: Washington State Higher Education Coordinating Board data set.
[a] Fees reduced.

Table 5. Family Share of Total Funding
(tuition as a percent of appropriations)

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
CA	10.6	10.6	13.7	17.9	20.3	19.2	17.4	16.6
FL	18.3	19.5	23.6	25.9	26.1	23.3	22.6	21.9
MA	23.6	30.1	39.1	35.1	33.3	31.8	30.6	29.3
NY	17.8	20.2	24.7	27.7	27.0	25.8	33.1	33.4
TX	20.2	22.7	23.3	25.6	24.8	26.4	28.4	28.3
WI	30.4	30.5	30.7	30.9	28.4	28.3	29.1	30.0

Source: Halstead (1997)

Enrollment

Except for Florida, where enrollment at public four-year institutions increased by 13 percent between 1991 and 1995, all other states had declines in enrollment (see Table 6). The drop in enrollment was greater in Wisconsin and California and negligible in Texas. It should be noted that

in California projections indicate an increase in the demand for higher education of nearly half a million students in the next ten years. In spite of the significant increase in tuition and fees in Massachusetts and New York, over the five-year period, the enrollment decrease was below 4 percent. After a steady decline, enrollment appeared to recover in Fall 1995 in California, New York, and Massachusetts, whereas Texas and Wisconsin were still facing decreases. Fall 1992 and 1993 marked the largest declines in California, Massachusetts, and New York. The decline continued in Wisconsin. In Texas enrollment marked a decrease only in Fall 1995.

Table 6. Enrollment at Four-year Public Institutions[a]

	Fall 1991	Fall 1992	Fall 1993	Fall 1994	Fall 1995	Percent change Fall 1995 compared to Fall 1991
CA	530,942	515,109	490,479	483,332	490,231	-7.7
FL	183,117	184,736	191,457	201,242	206,961	13.0
MA	105,884	104,625	101,732	101,796	101,814	-3.8
NY	346,305	156,593[b]	155,661[b]	345,202	335,728	-3.1
TX	420,161	421,906	422,811	423,647	417,431	-0.6
WI	154,316	149,473	145,188	142,998	139,192	-9.8

Source: The Chronicle of Higher Education. Almanac Issues.

[a] Headcount enrollment at all public research universities, state colleges and regional universities.

[b] These two figures represent FTE.

Survey Results

State Funding Problem

All respondents were asked to give an overall assessment of the extent of the problem created by state appropriations during the period for public higher education, systems, and institutions. SHEFOs in New York and Massachusetts characterized the funding problem as very large, California as large and Texas as small (Florida did not answer to this question).

Except for systems in Texas, where the respondents considered the state funding as a moderate or no problem, all other system finance officers described it as large or very large. University of California and Massachusetts State College System categorized the problem as very large whereas California State University, Florida State University System, University of Massachusetts, City University of New York, and State University of New York perceived the problem as large. The Texas State University officer was the only one who did not view the state funding during the period as a problem. The other three Texas system finance officers described it as moderate.

Institutional responses divided in perceiving the problem as moderate, large, and very large. Comprehensive institutions tended to view state funding during this period as more of a problem than graduate and research campuses. Whereas institutional responses in all six states indicated that funding created problems, as expected, institutions in California and Massachusetts perceived it as considerable. Only some of the comprehensive institutions in Texas did not consider state funding as problematic. However, more than a quarter of the comprehensive institutions in the Texas A&M system indicated the funding as a large problem. Although state funding for public higher education

in Wisconsin decreased only in 1995-96 and 1996-97, after a steady increase from 1990-91 to 1994-95, one of the graduate and research institutions in this state considered that the reduction created a large problem. More than half of the comprehensive institutions also characterized the problem as large or very large. Of the twelve systems in this study, campuses of California State University and University of California indicated that the reduction in state funding was large.

Overall, institutional respondents indicated a larger problem than systems and, in a few cases, the perceptions of system officers do not match those of their institutional counterparts within the same systems. The sharpest difference occurred for the Texas State University, where institutional finance officers felt that state funding created a moderate or large problem but the system finance officer did not perceive a problem. A number of institutions, both comprehensive and graduate, in Wisconsin, on the other hand, felt the problem was only moderate whereas the system officer characterized it as large.

Role of tuition and fee increases in filling the budget gap

Respondents were asked to what extent did tuition and fee increases fill the gap between state funding and necessary budgets. The response choices followed a Likert scale (fully, significantly, moderately, slightly, and none). The assessment of the extent to which tuition and fee increases filled the budget gap varies. Only SHEFOs in California and Massachusetts considered that these increases filled significantly the budget gap. The respondents from New York, Florida and Texas felt the role of tuition and fee increases was moderate. On the other hand, nine of the twelve system officers perceived it as significant. California system officers rated the contribution of tuition and fee increases as moderate. Only the Florida State University System officer thought the increases provided no help. The responses in Florida and Texas seem justified by the decision of the legislatures in these states to limit in-state tuition increases.

Institution finance officers had a different perspective. The respondents from graduate and research universities thought the increase played a slightly more significant role than their counterparts from comprehensive campuses. More than half of the respondents from graduate and research institutions in California, Texas, and Wisconsin and comprehensive institutions in Massachusetts believed tuition and fee increases filled the drop in state support significantly. The rest of institutional respondents from the other states felt the increases helped only slightly or moderately.

Planning

Respondents were queried about the development of plans and the participants in the process. Although, overall, respondents felt that state funding created problems for the public higher education, all five higher education coordinating agencies allowed full discretion to systems and campuses in dealing with the funding cuts or constraints. Only in Florida, did the legislature reserve the right to approve system and campus plans.

Systems did not seem eager to take advantage of this discretion. Only University of California, University of Massachusetts, City University of New York and University of Wisconsin developed systemwide plans. The first two developed a combination of short (one year)-, middle (two years)-, and long-term (more than two years) plans, while the latter focused on a medium-term range. However, the University of California system officer provided a comment that suggested full discretion to campuses: "Budget cuts of $433 million were distributed to the campuses. Campuses

were given discretion as how to take the cuts." Additionally, Florida State University System, Texas A&M and Texas State University developed guidelines, but they also cited full discretion to campuses. California State University, Massachusetts State Colleges, State University of New York and University of Texas allowed full discretion to campuses without developing plans or guidelines, although New York, California and Massachusetts had the most severe problems. Seven of the systems did not retain the right of approval of campus plans. For those systems that did prepare plans or guidelines, the planning groups included a range of participants, but system officers clearly dominated the process.

Institutions had to tackle the problem mostly on their own. Only a small percent of the responding institutions did not develop any type of plan. The percent of graduate and research institutions without a plan was more than double the percent of comprehensive institutions (15.5 percent versus 6.3 percent). Graduate and research institutions preferred middle-term plans or a combination of short-, middle-, and long-term plans. Comprehensive institutions emphasized either short-term plans or a combination of the three. Of the six states, only some of the graduate and research institutions in Florida, Texas and Wisconsin did not appear to have any long-term plans.

Most institutions used a planning group to prepare responses to the budget problems. All institutions in Massachusetts and Wisconsin had planning groups. However, a third of the institutions in Florida and almost a third of the comprehensive institutions in Texas did not have such groups. Although California was one of the states with the largest reductions over this period, some of its institutions had no planning group either. Nevertheless, some of the California State University campuses responded with comprehensive plans. An example of such a plan is the one developed by California Polytechnic State University, San Luis Obispo. In describing the rationale for the plan, Warren J. Baker, President, voiced the concerns of California institutions: "Curtailed state budgets over the past few years impacted the quality of our programs and also threatened the nature of the campus itself owing to our many high-cost disciplines. Sacramento provided us with just enough money to scrape by, but no funds were forthcoming for us to address significantly such issues as enhanced quality and learning efficiency. For Cal Poly to fulfill its promise as a superior university, the campus had to find ways not only to survive, but to continue to excel" (Baker, 1996, p. 1).

Where planning groups existed, they usually included campus trustees, representatives of the campus central administration, academic deans, chairs of academic departments, faculty, non-teaching professionals and employees, and students. Only in a few cases, were one or more of these groups omitted. Regardless of the composition of the planning groups, in all states, the campus central administration dominated the planning process, seconded in some instances by either academic deans or faculty. Only in the State Colleges in Massachusetts did the campus trustees play a dominant role in this process.

The distribution of the budget reduction

One of the survey questions inquired about the primary method of distributing budget reductions to systems, from systems to campuses, and by campuses to their units. Respondents could chose across-the-board or selective distribution. The Texas SHEFO responded that there was no budget reduction to distribute and his counterpart in New York did not know how the cuts were allocated since this was done by the two system offices. The SHEFOs in California and Massachusetts indicated that the reductions were distributed selectively to systems but across-the-board to campuses whereas the respondent from Florida indicated the opposite. It should be noted that none of the five coordinating bodies has authority for budget allocations, although some are

involved in determining the budget formulas (for example, the Texas Higher Education Coordinating Board).

Systems from all states but Texas distributed the budget reductions across-the-board to campuses. State University of New York used this strategy only after 1994, applying selective distribution during 1990-94. In Texas, systems do not play a role in budget distributions because appropriations are allocated directly to institutions.

Campuses, on the other hand, preferred the selective allocation to their units. More than half of the institutions, both comprehensive and graduate and research, distributed the budget reductions selectively. In Florida and New York, however, across-the-board was the method of choice for graduate and research institutions. In Wisconsin, one of the graduate campuses used selective distribution and the other across-the-board. Across-the-board also dominated in California institutions. Campuses in Massachusetts and Texas distributed the budget reduction mainly selectively. Except for California, the majority of comprehensive institutions in the other systems used selective internal distributions.

Institutional accommodation of the decline in state support

More than half of the responding institutions solved the decline in state support by reducing expenditures. The comprehensive institutions used this method more than their graduate and research counterparts, which had a slightly larger percent of institutions filling the budget gap through revenue increases. At the state level, institutions in Texas were the only ones that succeeded to fill more than three quarters of the budget gap through revenue increases whereas institutions in Florida and Wisconsin did it mainly through expenditure reductions. Institutions in Massachusetts and New York balanced quite well expenditure reductions and revenue increases.

Changes in public higher education governance

Only SHEFOs in New York and Massachusetts indicated that the state higher education governance changed toward more decentralization, although City University of New York and University of Massachusetts opted for more centralization. At the system level, California State University, Massachusetts State Colleges, State University of New York, University of Houston and University of Wisconsin indicated a change toward decentralization as well. The remaining systems indicated no change. Institutions were not asked a similar question.

Changes in public higher education structure

Seven of the systems indicated that a restructuring of their organization and operations occurred during the period. They included: California State University, University of California, Massachusetts State Colleges, City University of New York, Texas A&M, University of Houston, and University of Wisconsin. The most cited measures were devolution of functions and services to campuses and closure or consolidation of services. Six systems implemented one or both of these measures. Only University of California did not close or consolidate services and City University of New York did not devolve functions and services to campuses, since it pursued centralization. Other measures such as reduction of number of senior officers and contracting out services were used to a lesser extent in system administrations. University of California, Massachusetts State Colleges, University of Houston, and University of Wisconsin systems did reduce the number of senior officers. Only California State University and Massachusetts State Colleges contracted out services.

The restructuring steps were more numerous at the campus than at the system level. They were determined partly by the methods campuses themselves chose to distribute internally the budget reductions and partly by state mandates that required administrative reductions.

- Severity of budget reduction for various areas within institutions

Overall and in each state, institutional support and operation and maintenance were the areas most affected by the budget reductions. Only responses from the comprehensive institutions in Massachusetts and Wisconsin indicated a severe impact on academic support and student services, respectively. The same is true at the system level with two noticeable exceptions. Graduate and research institutions in the University of Texas system had their academic support budget cut severely while those in the Texas A&M system reported a significant reduction of the organized research support. Replies from comprehensive institution in the California State University system suggested that student services were seriously affected as well.

- Main personnel strategies implemented

For all institutions, the states imposed measures such as early retirement and vacancy, hiring, and salary freezes. Institutions themselves also imposed these measures along with layoffs and, in the case of graduate and research universities, salary reductions. Only responses from California and Massachusetts indicated that the state imposed layoffs for comprehensive institutions and only in the former state, salary reductions for graduate and research universities. In the other four states, such measures, if imposed, were the result of institutional initiatives. Only the comprehensive institutions in New York indicated the use of contract buyouts as a major personnel strategy. Massachusetts was unique in having the state impose no personnel strategy for its graduate and research universities. At the system level, no change in personnel strategies occurred for the comprehensive institutions in Texas State and University of Texas and for all institutions in the University of Houston. This latter system was the only one of the twelve in the study that did not implement any of these personnel strategies for its graduate and research universities.

- Retrenchment of full-time non-tenured and tenured faculty

Retrenchment of full-time faculty, tenured or non-tenured, occurred to a moderate extent. Overall, 52 percent of the responses indicated no retrenchment of non-tenured faculty and 63 percent no retrenchment of tenured faculty. Twenty percent of responses reported retrenching less than 2 percent of their non-tenured faculty and 13 percent reported a similar retrenchment for tenured faculty. The rest of the responses (18 percent for non-tenured and 13 percent for tenured faculty) indicated retrenchment of more than 2 percent of faculty. Graduate and research universities retrenched fewer faculty than comprehensive institutions. At the state level, California led the retrenchment actions. More than 70 percent of responding comprehensive institutions and 65 percent of graduate and research universities in this state retrenched full-time, non-tenured faculty. The percentage is the same for full-time, tenured faculty in the case of comprehensive institutions and 50 percent for graduate and research universities. None of the graduate universities in Massachusetts and New York retrenched full-time, tenured faculty, although the latter retrenched non-tenured faculty.

- Institutional productivity and efficiency actions

All institutions indicated implementation of some actions to improve productivity and efficiency. The most popular ones were increasing the use of technology for teaching and learning, the class sizes, and the ratio of part-time to full-time faculty. Graduate and research universities cited the increase of the faculty teaching load as the second most utilized approach after use of technology. Increasing class sizes was the main action taken by comprehensive institutions.

California and Florida's graduate and research institutions relied most heavily on increasing the faculty teaching load, whereas none of the institutions in Massachusetts took this action. Institutions in California and Florida were the most active in improving productivity and efficiency. Most institutions in the two states tried almost all choices listed as possible answers to the survey question: increasing the ratio of part-time to full-time faculty, reducing faculty in fields with low enrollment, increasing class sizes, increasing the use of technology for teaching and learning, and reducing time-to-degree. University of Wisconsin, in its guidelines for appointments, stated that, when filling faculty positions, preference should be given to candidates who have broad areas of competence within a discipline and, in cases where there is a need for a related discipline (e.g., business/economics), preference should be given to candidates with competence in both fields (University of Wisconsin, 1995).

University of Massachusetts, State University of New York, Texas A&M, and University of Texas led the efforts of increasing the use of technology for teaching and learning purposes. As expected, institutions in the Texas public higher education systems, with the exception of Texas A&M, used productivity and efficiency actions much less compared to the campuses in the other systems.

- Class/section reduction

Increasing class sizes was a popular measure at many institutions, especially comprehensive campuses. However, this measure did not lead to a significant reduction in classes or sections offered. Nevertheless, more than 40 percent of the responding graduate and research campuses indicated some class or section reductions.

Although, as mentioned later in the paper, graduate and research universities in California indicated decreasing enrollment in response to budget problems, they were surpassed only by their counterparts in Texas in preserving most of their classes and sections. All comprehensive institutions in California, on the other hand, indicated some class/section reductions. Forty-five percent of them cut more than 10 percent of their class or section offerings. None of the groups of institutions in the other states reached that high a level. Some comprehensive institutions in New York did indicate reductions between 6-8 percent of class offerings. All comprehensive institutions in the University of Massachusetts and University of Houston cut between 4-6 percent of their classes or sections.

- Institutional areas combined or eliminated

The combination or elimination of units, offices and activities in various areas paralleled the implementation of productivity and efficiency measures. The areas included campus central administrations;

colleges, schools, faculties; departments; academic support; student affairs; and maintenance and operations. Respondents cited the campus central administrations as the area most affected by combination or elimination of units, offices and activities. The functions of maintenance and operations were also subject to elimination or restructuring in more than a third of the responding institutions. Overall, Texas State University, University of Houston, and University of Texas maintained most of the areas, with the exception of campus central administrations. This reinforces the previous discussions related to the effect of the budget reductions on various institutional operations and services and personnel strategies. Comprehensive institutions used elimination or restructuring in all the areas more than their graduate and research counterparts. Of the six states, institutions in Wisconsin were the most aggressive in this realm. Most of the Wisconsin respondents combined or eliminated units, offices, and activities in all areas listed (academic support services, student services, administrative services, and maintenance and operations). Graduate and research campuses in Florida, on the other hand, indicated no such actions.

- Privatization of activities or services

Overall, less than a third of the respondents indicated privatization of activities or services. Although institutions were generally active in promoting productivity and efficiency actions, privatization did not play an important role in responding to the budget problems of the 1990s. Again, institutions from Texas used privatization more than institutions in the other states. Overall, 46 percent of responses from Texas indicated that some privatization occurred. These percentages were 41 in California, 33 in Florida, 14 in Massachusetts, 23 in New York, and 0 in Wisconsin. At least half of the comprehensive institutions in Florida and California privatized some of the areas, while none of the institutions in Wisconsin reported such steps. All comprehensive institutions in the University of Houston and University of Massachusetts privatized some of the areas.

As with the combination or elimination of functions, maintenance and operations were the primary areas targeted for privatization followed by administrative services. Institutions in California privatized the most, including academic support services and student services. Only comprehensive institutions in University of Houston and Texas A&M joined their counterparts in California in privatizing these activities.

- Overall impact on personnel and programs

Overall, more than half of the responding institutions indicated a net decrease of full-time faculty balanced by a net increase of part-time faculty. Institutions also reported a net decrease of administrators and support staff. Generally, the number of undergraduate programs was maintained or increased at graduate universities. Less than 20 percent of the responding graduate campuses indicated a net decrease of undergraduate programs. The decline was more substantial at comprehensive institutions, almost 30 percent of them cited a net decrease of such programs. Graduate programs, on the other hand, were reduced at 40 percent of the responding graduate and research campuses as opposed to 14 percent of the responding comprehensive institutions. Although the percentage is high for graduate and research universities, as discussed in the section related to elimination of degree programs, in absolute numbers, colleges and universities preferred to eliminate undergraduate rather than graduate programs.

The majority of institutions in California, New York and Wisconsin reported a net decrease of full-time faculty, which was only partially balanced by an increase of part-time faculty. Most institutions in Florida, on the other hand, increased full- and part-time faculty, administrators and support staff. Institutions in New York had the highest reported decrease in administrators and support staff, whereas institutions in Texas the highest increase.

Academic program closures and/or campus consolidations/closures

None of the five SHEFOs indicated that the coordinating bodies proposed formally or suggested informally campus consolidations or closures. Actually during the period, Florida decided to open its tenth public university (Chronicle of Higher Education, 1992). The closure or consolidation of campuses was not pursued by systems either. Only one of the systems proposed and consolidated a campus. Respondents' comments indicated that such measures are politically unpopular and extremely difficult to accomplish. The one consolidation reported was just a minor administrative merger.

Texas, Massachusetts and New York proposed closures of academic programs. The Texas Higher Education Coordinating Board led in terms of both proposed and achieved academic programs closed: two hundred were targeted for closure and the target was achieved. However, these were programs with low or no enrollment and campuses agreed to close them. The Massachusetts Board of Higher Education indicated just the number of programs closed, which reached twenty. In New York, the respondent did not indicate how many closures were proposed but reported the closure of five doctoral programs.

However, systems did pursue program elimination. University of California, Massachusetts State Colleges, University of Massachusetts, City University of New York, and University of Wisconsin did propose and achieved program closures, although not as many as initially identified. University of Wisconsin system closed 54 programs, followed by University of Massachusetts with 25 closures, Massachusetts State Colleges achieved 23, and University of California 3. The respondent from City University of New York did not specify numbers. The main reason for not achieving the proposed numbers was the resistance from campus presidents and local communities.

Elimination of degree programs

At the system level, only California and Florida did not eliminate degree programs. For other systems, the number of programs eliminated ranged from a high of 47 undergraduate programs at Texas A&M, to 40 at University of Wisconsin, to 35 at State University of New York, to 3 at University of Massachusetts, and to a low of 1 at University of Texas. Systems tended to preserve their graduate programs. From a high of 34 Masters and 3 Doctoral programs eliminated by Texas A&M, the numbers drop to 14 Masters and 3 Doctorates by State University of New York, to 14 Masters eliminated by University of Wisconsin, and 4 Masters and 2 Doctorates by University of Massachusetts. System finance officers indicated that the initiative for degree program elimination belonged mainly to campuses, except for Texas, where campuses shared the initiative with the coordinating agency.

Overall, only 37 percent of the responding institutions eliminated degree programs. Comprehensive institutions were more active in this respect than their graduate and research counterparts - 44 percent versus 19 percent. Except for institutions in Florida and Texas, in all other states, a significant percent of respondents, especially comprehensive institutions, indicated

elimination of degree programs. All comprehensive institutions in University of Massachusetts and almost all in City University of New York and Wisconsin System eliminated some degree programs. However, in terms of number of programs eliminated, New York and, surprisingly, Texas reported the highest numbers, 52 and 59, respectively (these numbers could be higher since many institutions did not indicate the number). The majority of degree programs eliminated were undergraduate, only a few Masters, and just two Doctorates. Of the total 143 undergraduate programs reported as eliminated, 58 were reported by institutions in Texas State University, 32 by institutions in State University of New York, and 20 by City University of New York. The rest split between institutions in Florida, California, Massachusetts, and Wisconsin.

Redesign of undergraduate curriculum

As in other areas, comprehensive institutions seemed much more active in redesigning the undergraduate curriculum than their graduate counterparts. Institutions in Florida and Wisconsin were the most involved in such activities whereas those in Texas and Massachusetts were the least involved. All responding comprehensive institutions in University of Massachusetts did indicate redesigning the undergraduate curriculum while none of the institutions in University of Houston took such action.

The most popular measure for comprehensive institutions was decreasing the credit hours for graduation followed by decreasing credit hours for academic majors. Equal numbers of comprehensive institutions indicated both increasing and decreasing the credit hours for general education, which were also the methods of choice for graduate and research institutions. It must be noted that, overall, only a small percent of all responding institutions did either.

Quality actions

Institutional finance officers were asked to indicate to what extent their campuses implemented student outcome assessment, "best practices" for undergraduate education, and/or TQM/CQI. Whereas all three where implemented to a limited extent or not at all, student outcome assessment appeared to have gained the most interest. A quarter of the responding comprehensive institutions and only 15 percent of the graduate universities indicated extensive use of assessment. These responses may suggest a diminishing interest in assessment and the quality movement. During times of budget stringency, the implementation of such practices would imply spending and not saving. Where already implemented, during the 1989-1991 state fiscal crisis, many of the assessment initiatives enacted changed direction or were put on hold (Serban, 1998).

Only graduate universities in Massachusetts and comprehensive institutions in Texas indicated extensive implementation of student outcome assessment while half of the graduate campuses in Wisconsin implemented TQM/CQI extensively. Graduate universities in the University of Texas joined their counterparts in Wisconsin in implementing TQM/CQI. Student outcome assessment was also of interest to graduate institutions at Texas A&M. Overall, however, for these six states the interest in these techniques seems diminished.

Change of campus missions

The budget difficulties of the 1990s did not push systems or institutions to change their missions. However, five system finance officers indicated that their systems revised campus missions. The five systems included Florida State University, State University of New York,

University of Houston, University of Texas, and University of Wisconsin. Campuses seemed to lead the initiation of mission changes. Florida was the only state where legislators, the system board and system administration officers took the lead rather than the campuses. This response reaffirms the strong tradition of legislative mandates in Florida.

System officers reported different approaches to mission change. Florida State University increased the emphasis on undergraduate education, maintained the existing interest in graduate education, but reduced the attention given to research and public service. The two systems in Texas followed an opposite path. They increased the emphasis on graduate education and maintained undergraduate education, research, and public service at previous levels. Only University of Texas, which has six graduate and research campuses, enhanced the research area. University of Wisconsin followed the two Texas systems and increased the stress on undergraduate education while maintaining the interest in the other areas.

Comprehensive institutions tended to be more active in changing their missions than graduate universities. New York is the only state where the percent of responding graduate universities indicating mission change was higher than that of comprehensive institutions. The largest percent of institutions indicating such a change was that of comprehensive campuses in Wisconsin seconded by both comprehensive and graduate campuses in Texas.

Where mission changes occurred, the predominant action was the increase of the emphasis on undergraduate education followed by graduate education. The former might have occurred without the budget problems, due to the public and state outcry about the quality of undergraduate education in general. The most significant increase of attention to undergraduate education occurred at comprehensive institutions in California. Of the graduate universities, only some of the institutions in Texas reported such a change in undergraduate education. Where some change of graduate university missions occurred, it was concentrated on graduate education or research, which indicates that the resource/reputation model continues to dominate in this type of institutions.

Even some of the comprehensive institutions reported an increased emphasis on graduate education and research – Florida, Texas A&M, Texas State University, University of Texas, and University of Wisconsin. The performance funding mechanism introduced in Florida in 1994 rewards institutions for the research money raised.

Changes in enrollment strategies

System and institution finance officers were queried about changes in enrollment strategies. Possible actions included increase enrollment, decrease enrollment, shift more first-time students to community colleges, increase enrollment of two-year college transfers, increase enrollment of out-of-state students, or increase enrollment of in-state students. Six of the systems did not change their existing enrollment strategies. They were: University of California, Florida State University, State University of New York, Texas State University, University of Houston, and University of Texas. California State University sought to decrease its enrollment by cutting admissions and shifting more first-time students to community colleges. However, at the same time, community colleges had to increase tuition, which led to enrollment decreases. University of Massachusetts intended to decrease enrollment as well. Massachusetts State Colleges, on the other hand, preferred to shift more first-time students to community colleges and increase the enrollment of transfer students. City University of New York sought to increase its enrollment. Although head-count enrollment at CUNY increased by 4 percent between 1990-91 and 1995-96 (Reeves Bracco and Sanchez-Penley,

1997), it experienced a 2.1 percent decline in 1995-96 compared to the previous year. Texas A&M took the same approach as CUNY, aiming to increase transfer and in-state enrollments. During 1987-95, enrollment at University of Wisconsin was reduced by over 12,000 FTE in order to achieve a level of spending per student comparable with the peer national average. However, the University has reversed this policy, trying to increase enrollment by 4,000 FTE for 1995-2001.

At the campus level, overall, more than half of respondents indicated a change in enrollment strategy with comprehensive institutions much more active in this area than their graduate and research counterparts. Only in Florida and Wisconsin, the majority of graduate and research universities changed their enrollment strategy whereas institutions in Massachusetts were the least concerned about taking such action. These responses reflect two different contexts. Florida has been facing tremendous enrollment growth for the last several years with projections indicating further increases. As mentioned, in Wisconsin, the system decided to decrease enrollment during 1990-94.

The graduate and research universities tended to decrease enrollment during the period and the comprehensive campuses did the opposite. The increase in enrollment was achieved mainly by increasing the enrollment of transfer students in California, New York, and Texas. Graduate and research universities in Texas increased the enrollment of in-state students. Comprehensive institutions in Wisconsin indicated an effort to increase enrollment of out-of-state students. Only graduate and research institutions in University of Massachusetts, Texas A&M, and University of Texas did not change their enrollment strategy.

Factors influencing budget allocations

SHEFOs, system and institution finance officers were asked to rank the importance before 1990 and after 1996 of the following elements in the budget allocations to campuses: base budgets, enrollments, salary increases and inflation, institutional missions, performance, productivity, and special projects and programs. The relative importance of funding factors for allocations to campuses shifted only slightly during the period. According to SHEFOs in California, Florida, and Massachusetts, base budgets remained the most important factor in setting campus budget allocations. In New York, enrollments remained the most important factor, whereas in Texas institutional missions continued to have the main influence. The other factors considered in the budget allocations also tended to maintain their relative importance.

The only notable exception comes from New York. The SHEFO in this state indicated that productivity replaced base budgets as the second most important factor. Two notable initiatives might have prompted this response. State University of New York is considering the implementation of a new Resource Allocation Model in 1998-99, which would incorporate, along with enrollment, performance and mission-related components assumed to be correlated with institutional productivity (State University of New York Resource Allocation Methodology Committee, 1997). The most recent effort of City University of New York to promote productivity was the decision of its Board of Trustees in October 1997 to tie the addition of new faculty positions on CUNY campuses to graduation rates and other efficiency standards (Selingo, 1997).

The responses from the system finance officers show a few shifts in the allocation factors. Base budgets, enrollments, and salary increases and inflation remained the dominant factors. Some exceptions occur. For California State University, base budgets, which were fourth in importance before 1990, became the most important after 1996, pushing enrollments to the second place. At City University of New York, salary increases and inflation, which were the second in importance

before 1990, fell in the fifth place. After 1996, at CUNY, base budgets, enrollments, and special programs became the top three factors. Interestingly, three systems – California State University, City University of New York, and University of Texas - ranked special projects or programs in the top three factors, considering them more important after 1996 than traditional elements such as salary increases and inflation. Overall, institutional missions became less and performance slightly more important.

In terms of the importance of these factors for the internal allocations within campuses, institutional responses tend to be even more conservative than the state and system ones. Overall, base budgets, salary increases and inflation, and enrollments were the most important before 1990 and remained so after 1996. Generally, institutional missions, performance, productivity, and special programs continued to be least important in the budget allocation process. However, except for graduate universities in California, all other institutions indicated that performance has become slightly more important for budget allocation, especially in Florida, where a performance funding program was introduced in 1994, and in Texas and Massachusetts, especially for comprehensive institutions. Texas attempted, without success, to introduce performance funding in 1993, but succeeded in implementing performance budgeting (for a discussion of performance funding versus performance budgeting see Burke and Serban, 1997, 1998). Massachusetts, on the other hand, has no such program in place. With the exception of graduate and research universities in California and Massachusetts, productivity also increased in importance, especially in Texas and New York. Of the top three elements influencing budget allocations, with the exception of graduate universities in California and Massachusetts, enrollment became even more important after 1996 than before 1990. This response is influenced by the demographic growth facing almost all of the study states, especially California, Florida, and Texas, and by the reliance on budgeting techniques that are mostly enrollment driven in all these states. Even in Florida, the performance funding mechanism did not replace the main budgeting formula based mainly on enrollments.

Actions that best characterize the system and institutional strategies in dealing with the budget problems

All respondents were asked to indicate which of seven possible actions best characterized the responses of systems and institutions to the fiscal constraints of the first half of the 1990s. The choices provided were: restructuring of organizations and operations, revising campus missions, revising degree requirements and curriculum, restructuring teaching and learning processes, changing enrollment strategies, raising revenues, and restricting expenditures. Respondents were limited to checking no more than three choices.

SHEFOs claimed that both systems and institutions relied mostly on raising revenues and restricting expenditures as main avenues of dealing with the budget difficulties. Only the SHEFOs in Massachusetts and California cited restructuring of organization and operations as a major strategy adopted by system administrations and campuses. Indeed, two campuses joined the University of Massachusetts system during the period. Although institutional responses from California did indicate restructuring of organization and operations, most of the steps taken were short-term solutions such as early retirement, salary freezes, reductions of classes and other services, foregoing maintenance, and shifting to more part-time positions.

Systems finance officers, in assessing what strategies best described the response of their own systems, noted raising revenues as the prevailing method. Eight of the twelve systems cited this

approach. Six systems also indicated restructuring of organization and operations. Although this response does not match the SHEFOs' perceptions of system actions, it is consistent with the system responses to the restructuring question. Only two systems felt that restricting expenditures and changing enrollment strategies were part of the three main responses to the fiscal constraints. Only one system listed revising degree requirements and curriculum. None of the systems cited revising campus missions or restructuring teaching and learning processes as very important.

System responses on how their campuses handled the budget situation indicated that institutions were more active than systems. Eight systems considered that their institutions relied primarily on raising revenues and restricting expenditures. Interestingly, although tuition and fees increased significantly during the first three years of the period in both California and New York, the system finance officers at University of California and City University of New York did not think that raising revenues was one of the top three actions undertaken by their institutions. Only five system officers felt that institutions engaged seriously in restructuring of campus organization and operations. Revising campus mission was cited by only three system officers, changing enrollment strategies also by three, revising degree requirements and curriculum by two, and restructuring teaching and learning processes by none.

Institutional responses are partially consistent with the views expressed by system and state officers. The top three actions reported by institutions, both comprehensive and graduate, were restricting expenditures, restructuring of organization and operation, and raising revenues. Only comprehensive institutions in California and Texas and all institutions in Wisconsin indicated changing enrollment strategy as one of the most important actions taken in this respect. As already suggested by previous answers, revising campus missions and restructuring teaching and learning were actions of choice for none of the institutions in these states. Only comprehensive institutions in the University of Texas cited restructuring of teaching and learning processes as the main method in dealing with the budget problems.

Impact of state funding on quality and access

All respondents were asked to indicate their assessment of the impact of the state funding in the first half of the 1990s on the quality of and access to undergraduate education, and the quality of graduate education, research and public service. Of the five SHEFOs, those from California and Massachusetts considered that the access to undergraduate decreased, the one from Texas felt it increased, and the other two thought it was maintained. The SHEFOs from Massachusetts and New York felt the quality of undergraduate education decreased, while the others reported maintenance. The New York SHEFO perceived a decline in the quality of graduate education, research, and public service. The others claimed maintenance. Only the SHEFO from Massachusetts thought the quality of public service declined.

The responses of system finance officers partially confirm and partially contradict the SHEFOs' assessment of the impact. At one extreme, Texas A&M indicated that all five characteristics improved. At the other extreme, University of Texas and City University of New York reported a decline in the quality of and access to undergraduate education. Except for University of Wisconsin, which did not answer this question, the other systems cited change of at least one characteristic. Only University of California felt that the quality of research declined. The system officers of the other systems indicated maintenance and three (University of Massachusetts, Texas A&M, and University of Houston) indicated higher quality. Four systems reported a decline

in undergraduate access (California State University, Massachusetts State Colleges, University of Massachusetts, and State University of New York). City University of New York and University of Texas system officers perceived a decline in the quality of graduate education. University of California indicated a decrease in the quality of public service whereas Texas A&M and Texas State University felt that it increased.

Campuses, however, perceived greater erosion of quality and access. This was particularly evident from the institutional responses of California and New York. Forty-one percent of all responding institutions cited reduction of undergraduate access and 30 percent a decline in the quality of undergraduate education. More comprehensive than graduate institutions reported a fall of undergraduate access (44 percent versus 35 percent). Equal percentages indicated decline in the quality of undergraduate education. Generally, respondents felt that the quality of graduate education, research, and public services was maintained. Fewer than 20 percent of either comprehensive or graduate campuses, perceived a reduction in the quality of graduate education. However, more than a quarter of each type of institutions indicated a decrease in the quality of public service. Institutions in Florida, in particular, felt that the quality of public service mainly decreased. The quality of research did not seem to decline, although more comprehensive campuses than graduate universities reported a decrease (23 percent versus 15 percent).

Conclusion and Discussion

The decline in state funding in the first half of the 1990s spurred bleak predictions for public higher education across the country. In 1995, Breneman wrote: "California ... provides an instructive case of what a higher education disaster might look like. There, 3,000 full-time faculty have been laid off or "early retired." Enrollment is down 200,000. The promise of guaranteed access to all qualified applicants has been rescinded. Higher education in California is in a state of emergency and continuing current policies will deny hundreds of thousands of young citizens the opportunity to attend college. For California, as for any other state facing similar circumstances, that outcome would be a social, economic, and moral catastrophe." Cobb and Edmonds (1995) echoed Breneman when writing about Florida: "Over the last seven years [in Florida], both the state universities and community colleges have suffered an effective 30% drop in funding per student (adjusting for cost-of living and enrollment increases)....Florida now ranks dead last among Southern states in per capita state support of public universities...There is the demographic kicker as the 'baby boom echo' generation reaches college age in Florida. The state is going from just over 90,000 public high school graduates in 1991 to just under 140,000 by the end of the next decade. That increase of 50,000 a year (assuming 40% go on to college) translates to 80,000 more students for the system to handle by 2010." The dramatic decline in state funding in Massachusetts between 1988-92 "came only a few years after state leaders began a concerted effort to improve the public institutions, which had been overshadowed by private colleges"..."the effects were devastating" (Chronicle of Higher Education, 1993, p. 77). In New York, "the recession's budget cuts hit both systems hard, forcing reductions in staff, deferrals of maintenance on older buildings, and reassessment of the way business is done" (Chronicle of Higher Education, 1993, p. 92).

However, "the way business is done" in public higher education in the six states of the study does not seem to have actually changed much, on the contrary, "... observers see only isolated examples of fundamental change" (Lively, 1994). The results of the surveys appear to confirm this

conclusion. Since the state coordinating bodies have little or no authority over the budget decisions in these states, systems and campuses had full discretion in dealing with the constraints of the period. However, systems did not seem eager to take charge of the situation. Most of them did not use their planning and budgeting authority to shape system and campus priorities. Only four of them developed systemwide plans and the others issued only guidelines or let campuses decide on their own. Only in Florida, did the legislature reserve the right to approve system and campus plans. Whereas the lack of system leadership in planning and budgeting is consistent with the reported move toward decentralization, it certainly raises questions regarding the current and future role and mission of systems for public higher education in general.

In terms of actual measures implemented, the survey responses match only partially the reports from previous research. According to the Campus Trends Series (El-Khawas, 1993, 1994, 1995, 1996), published annually by the American Council on Education, the responses to the fiscal stringencies of the 1990s evolved from short-time, fairly easy to implement measures to long-term, substantive actions. The first category included enrollment reductions, increased use of part-time faculty, early retirement and vacancy freezes. The latter included planning processes such as outcome assessment, academic program review, quality improvement, restructuring, downsizing, refocusing mission, and modifying campus processes such as degree completion, business and finance, and student services. Measures such as redesign of courses and widespread application of technology and distance learning became more prevalent only in the last two years.

This study indicates that systems relied mostly on short-time measures such as enrollment reduction, tuition and fee increases, vacancy and salary freezes and early retirements. They emphasized raising revenues and restricting expenses and neglected reshaping missions and priorities. Systems did pursue efficiency actions such as restructuring and downsizing their own administrations and reducing duplicative academic and degree programs. Through their actions, most systems chose quality over access.

Campuses had to tackle the difficulties of the first half of the 1990s mostly on their own. Institutional responses suggest that campuses, especially comprehensive institutions, took a much more proactive approach than their systems. Comprehensive campuses engaged to a greater extent than research universities in both short- and long-term planning. As opposed to systems, campuses did not refrain from reallocating resources selectively. Colleges and universities did make efforts to maintain academic support, student services, and organized research support by reducing the budgets for institutional support and operation and maintenance. However, campuses did not depart significantly from the systems' preference for short-term, cost-saving measures such as early retirement, and vacancy, hiring, and salary freezes. Some of them took these measures a step further by also imposing layoffs and salary reductions. Nevertheless, campuses did preserve their full-time non-tenured and tenured faculty.

Campuses pursued improvement of efficiency and productivity through increased use of technology for teaching and learning purposes, class sizes, ratio of part-time to full-time faculty, and faculty teaching loads. However, campuses tried to avoid reducing the number of sections and/or classes offered but more than a third eliminated degree programs. Colleges and universities followed the system example by restructuring and downsizing their central administrations but avoided privatization of activities and services. Campuses split in terms of changes in enrollment strategies with graduate and research universities mainly decreasing enrollment while their comprehensive counterparts tried to increase it. The problems of the 1990s did not seem to

influence the priorities influencing budget allocations. Base budgets, salary increases and inflation, and enrollments continue to drive the budget decisions at the campus level.

Colleges and universities were more proactive than their systems regarding the reshaping of their missions. Comprehensive institutions increased the emphasis on undergraduate education while also pursuing enhancement of graduate education and research. Their graduate counterparts, however, did not appear too concerned about the criticisms related to the quality of undergraduate education and continued to emphasize graduate education and research. Where redesign of undergraduate curriculum occurred, it involved mostly reducing credit hours for graduation and for academic majors. However, campuses did not appear interested in implementing quality actions such as student outcome assessment, "best practices" for undergraduate education, or Total Quality Management or Continuous Quality Improvement.

Regarding the impact on the quality of and the access to undergraduate education and the quality of graduate education, research and public service, reactions are mixed. The underlying finding, however, is the reduction of student access followed by the decline of undergraduate education quality. Graduate education, research, and public service seem to have suffered the least or not at all.

Overall, the responses to the changes in the finance of public higher education in the 1990s did not appear to lead to substantive policy initiatives or long-term planning. Most of the measures implemented were short-term, cost-saving approaches that had a negative impact on the access to and the quality of undergraduate education. The three trends emerging from the financial constraints of the first half of the 1990s that appear to have a lasting effect are: the decentralization of system governance, the adoption of revenue-raising strategies once the preserve of private schools, and the shift of burden for paying for college from the states to the students and their parents.

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Appendix 1.

Overall Survey Population and Respondents

Position	State	Sent	Received	Rate of Response %
SHEFOs	CA	1	1	100.0
	FL	1	1	100.0
	MA	1	1	100.0
	NY	1	1	100.0
	TX	1	1	100.0
	Total	**5**	**5**	**100.0**
System Finance Officers	CA	2	2	100.0
	FL	1	1	100.0
	MA	2	2	100.0
	NY	2	2	100.0
	TX	4	4	100.0
	WI	1	1	100.0
	Total	**12**	**12**	**100.0**
Institutional Finance Officers	CA	29	17	58.6
	FL	10	9	90.0
	MA	13	7	53.8
	NY	37	29	78.4
	TX	43	29	67.4
	WI	13	7	53.8
	Total	**145**	**98**	**67.6**
TOTAL		**162**	**115**	**71.0**

Survey of Institutional Finance Officers by State and System. Population and Respondents.

State	System	Type of Institution	Sent	Received	Response rate %
CA	CSU	Compr. Inst.	20	11	55.0
	UC	G&R Inst.	9	6	66.7
	All Inst.		29	17	58.6
FL		G&R Inst.	3	3	100.0
		Compr. Inst.	7	6	85.7
	All Inst.		10	9	90.0
MA	UM	G&R Inst.	2	2	100.0
		Compr. Inst.	3	1	33.3
		All Inst.	5	3	60.0
	State Coll.	Compr. Inst.	8	4	50.0
	All Inst.		13	7	53.8
NY	CUNY	G&R Inst.	1	0	0.0
		Compr. Inst.	11	7	63.6
		All Inst.	12	7	58.3
	SUNY	G&R Inst.	7	5	71.4
		Compr. Inst.	18	14	77.8
		All Inst.	25	19	76.0
	All Inst.		37	29	78.4
TX*	TX A&M	G&R Inst.	3	2	66.7
		Compr. Inst.	8	7	87.5
		All Inst.	11	9	81.8
	TX State	Compr. Inst.	5	3	60.0
	UH	G&R Inst.	1	1	100.0
		Compr. Inst.	3	1	33.3
		All Inst.	4	2	50.0
	UT	G&R Inst.	6	4	66.7
		Compr. Inst.	6	3	50.0
		All Inst.	12	7	58.3
	All Inst.		43	29	67.4
WI		G&R Inst.	2	2	100.0
		Compr. Inst.	11	5	45.5
	All Inst.		13	7	53.8

* In Texas there are three institutions not part of any of the four systems.

Legend of system names' abbreviations:
CSU – California State University
UC – University of California
UM – University of Massachusetts
State Coll. – Massachusetts State Colleges
CUNY – City University of New York
SUNY – State University of New York
TX A&M – Texas A&M
TX State – Texas State University
UH – University of Houston
UT – University of Texas